

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

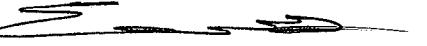
Applicant : Shigeura et al.
App. No : 09/908,994
Filed : July 17, 2001
For : APPARATUS AND METHOD FOR
SPECIFIC RELEASE OF CAPTURED
EXTENSION PRODUCTS
Examiner : Bradley L. Sisson
Art Unit : 1634
Conf # : 8729

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Eli A. Loots, Reg. No. 54,715

REPLY BRIEF**Mail Stop Appeal Brief - Patents**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Examiner's Answer sent February 21, 2008, Appellants provide the following additional remarks.

Remarks/Arguments begin on page 2 of this paper.

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REMARKS

Appellants respectfully disagree with the Examiner's characterizations of the claimed invention and the cited art in the Examiner's Answer of February 21, 2008. Appellants note that it is especially telling that for the recited method claims, the Examiner is simply identifying various elements from different devices within Zanzucchi, and reciting that they could be used in the claimed manner when combined with additional teachings in other references. The Examiner has, apparently inadvertently, fused two separate devices (depicted in FIG. 1B and FIG. 7B) to support much of the reasoning behind the present rejections. Appellants note that neither Zanzucchi, nor the other cited art, nor the Examiner's rejections, supply any rational reason for combining the different, and disparate, embodiments in Zanzucchi in the manner proposed by the Examiner. The following sections briefly outline exemplary sections of the Examiner's Answer which have mischaracterized the art and the claimed invention. Appellants submit that the remaining sections of the Examiner's Answer are addressed in the documents of record.

On pages 7 and 8 of the Examiner's Answer, the Examiner, while depicting FIG. 1B of Zanzucchi (a serial arrangement), discusses the characteristics of the "successive wells" described in col. 11 of Zanzucchi. However, the relevant section of col. 11 of Zanzucchi is directed to FIG. 7B of Zanzucchi, a parallel arrangement of wells. Appellants note that such a parallel embodiment is clearly distinct from the claimed embodiment, in which one flows the mixture "such that the mixture flows serially through each of the plurality of solid supports." More importantly, Zanzucchi's embodiment in FIG. 7B is clearly distinct and opposite in nature to the teachings in FIG. 1B of Zanzucchi, which is depicted and heavily relied upon in the Examiner's answer and the rejections of record. Appellants submit that it is improper to combine these disparate teachings. It is clear that these embodiments in Zanzucchi are opposite in nature as one is serial and one is parallel.

On page 9 of the Office Action, the Examiner has asserted that the sealing means taught in Zanzucchi does not teach away from the claimed embodiment. The Examiner appears to suggest that the sealing means in Zanzucchi is not problematic for the Examiner's combination

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because Zanzucchi does not teach a sealing member between the wells in the embodiment in FIG. 1. Presumably, the Examiner is now implying that these valves are not part of FIG. 1 and not needed in Zanzucchi's device.

Appellants note that this is inconsistent with Zanzucchi's actual teachings, (col. 9, 34-38), which notes that the valves are needed for heating to prevent "back pressure." If the back pressure described in Zanzucchi were allowed to occur, it is clear that mixing would result and the polynucleotides would not be "isolated in separated form," as recited in the claims.

More importantly, Appellants' note that the Examiner's current position is directly contrary to the Examiner's assertions in the Advisory Action of August 9, 2007, in which the Examiner noted that the valves in Zanzucchi are required to allow the heating to take place in one substrate without heating a different substrate (see p. 2, second and third paragraphs).

The Examiner is clearly being inconsistent in his reading of Zanzucchi and FIG. 1. Moreover, Appellants note that regardless of the position taken by the Examiner (either that the valves are, or are not, required), it is clear that the Examiner's proposed combination would not work for its intended purpose. For example, if the valves are present, then Zanzucchi's disclosed use of the valves would prevent the entire mixture from flowing though the flow path "such that the mixture flows serially through each of the plurality of solid supports" prior to heating. The Examiner appears to implicitly acknowledge this issue in the present Answer as he has asserted that the valves are not present. Alternatively, if the valves are excluded and Zanzucchi's device is heated without the valve, the resulting "back pressure" explicitly described in Zanzucchi (and implicitly acknowledged by the Examiner in the previous Advisory Action) would mix the samples and thereby prevent the elution of the polynucleotides in separated form, as claimed.

On page 10 of the Examiner's Answer, the Examiner has asserted that there is no requirement in the claims that "the sample flow through all of the supports." As such, the Examiner appears to have ignored the arguments and elements regarding this aspect. Appellants note that the claims recite that one flows the mixture through a flow path:

containing a plurality of solid supports which are located in series in the flow path, such that the mixture flows serially through each of the plurality of solid supports

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(emphasis added)

Appellants note that this arrangement clearly requires that the mixture flows through each of the plurality of the solid supports. As previously noted, this element is missing from Zanzucchi's stepwise teaching and absent from the other references as well.

On page 12 of the Examiner's Answer, the Examiner has asserted that:

Zanzucchi et al., teaches wells in series that allow for the serial passage of a test sample over a specific binding member. Also, Zanzucchi et al., also explicitly teaches that each well may have heating and cooling means as well as means to effect stirring or sample movement. Such explicit teachings speak to combining both serial flow and parallel techniques.

(emphasis added)

Appellants note that the Examiner's conclusion is not a logical result from the noted teachings of Zanzucchi. The heating, cooling, and mixing means in Zanzucchi are for reactions that occur in the serial arrangements of wells (see entire patent), and thus are not denoting some unspoken serial/parallel hybrid processes. More importantly, Zanzucchi's clear disclosure of one serial embodiment (*e.g.*, FIG. 1), and another distinct parallel embodiment (*e.g.*, FIGs. 7B and 8) clearly demonstrate that Zanzucchi, while interested in both options, did not envision or appreciate that a parallel arrangement could be practiced in a serial device.

On page 13 of the Examiner's Answer, the Examiner has asserted that "the ordinary artisan would have been motivated to have modified the method of Zanzucchi et al., [sic] by including the tag sequences of Brenner..." Appellants note that in the final rejection, the Examiner was not using Brenner for this aspect, rather, the Examiner was asserting that the microparticles in Brenner, which the Examiner asserted were the same as the recited "solid supports," could be used in Zanzucchi (Final Office Action, page 5, item 17). As such, it appears that the Examiner may have retracted his previous rejection and presented a different rejection. Appellants note that if the Examiner is now asserting that the only relevant teaching of Brenner is the tags, then there is no reason to include the microparticles or attach a polynucleotide to a microparticle and thus the Examiner's proposed rejection lacks the "solid support" recited in the present claims and thus not all of the claimed elements have been taught. Appellants note that

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Okano clearly teaches the attachment of polynucleotides directly to a surface (FIG. 3); thus, there is no rational reason to include Brenner's solid supports.

In summary, for the previously noted reasons and in light of the above comments regarding the Examiner's Answer, Appellants submit that the Examiner has failed to demonstrate a *prima facie* showing of obviousness. Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 4/18/08

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